



Overview of the George E. Brown, Jr.  
Network for Earthquake Engineering Simulation  
(NEES)

NEES Awardees Meeting at NSF  
February 22-23, 2001

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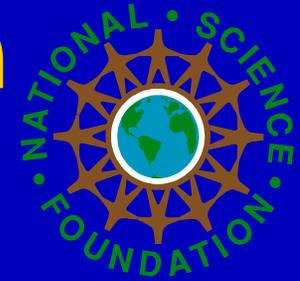
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# NEES Contacts & Information

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# NEES Components

- **NEES Collaboratory**

*A national resource for the entire earthquake engineering community*

*Success will be measured by its use throughout the community*

- **NEES System Integration (NSF 00-7) ~\$10M**

- Builds the NEES high performance Internet network

- **NEES Equipment Sites (NSF 00-6, Phase 1, and planned NSF 0x-xx, Phase 2) ~\$70M**

- Builds ~20 new/upgraded NEES experimental facilities

- **NEES Consortium Development (NSF 01-56) ~ \$2M**

- Develops NEES Consortium
- Organizes community input for system integration efforts
- Coordinates outreach and training for NEES equipment sites operational before September 30 ,2004

# Major NEES Milestones

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<u>Date</u>	<u>Milestone</u>
Jan 01	Phase 1 Equipment Awards
July 01*	System Integration Award
Oct 01	Consortium Development Award
Oct 02*	Phase 2 Equipment Awards
Oct 03	Consortium Formed
FY 04	NEES Collaboratory Acceptance Panel
Sept 04	Construction Completed
Oct 04 – Sept 14	Consortium and Collaboratory Operation

\* Approximate, pending peer review and funds available

# NEES System Integration

- **Underway: a 6-month “Scoping Study”**
  - Award CMS-0084529, “NEESgrid: A Distributed Virtual Laboratory for Advanced Earthquake Experimentation and Simulation,” \$300,000 to the University of Illinois at Urbana-Champaign. Principal Investigator: Thomas I. Prudhomme
  - August 15, 2000 – February 28, 2001
  - <http://www.neesgrid.org>
  - Produces detailed system architecture, design, and implementation plan
- **Review Scoping Study Report in March 2001**
- **If supportive recommendation, continue through FY04 to develop full System Integration activities**

# NEES Earthquake Engineering Research Equipment

- **NSF 00-6 Phase 1 (11 awards - total \$45 M)**
  - <http://www.nsf.gov/od/lpa/news/press/01/pr0110.htm>
  - Shake tables (2)
  - Centrifuges (2)
  - Tsunami wave basin (1)
  - Large-scale laboratory experimentation systems (4)
  - Field experimentation & monitoring installations (2)
- **NSF 0x-xx Phase 2 (est. ~ \$15-20 M)**
  - Solicitation released in 2001 (planned)

# NSF 01-56

## NEES: Consortium Development

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- Letters of intent due: May 4, 2001 (optional)
- Proposals due: June 4, 2001
- Award Date: October 1, 2001
- Duration: 3-year maximum  
(Oct 01 - Sept 04)
- Funding: Up to total \$2 M
- NSF Contact: [jpauschk@nsf.gov](mailto:jpauschk@nsf.gov)

# Two Major Milestones

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- By October 1, 2003 (or earlier)
  - Incorporation of the NEES Consortium
  - All documents for NEES Consortium operation completed
- By October 1, 2003
  - Proposal submitted to NSF for ten-year NEES Consortium operation (October 1, 2004 - September 30, 2014)
  - Proposal peer reviewed
  - Award subject to outcome of peer review and availability of funds

# NEES Consortium Concept

- Focal point for NEES
- Operate NEES collaboratory
- Operate under ten-year plans (strategic, business,...)
- Establish policies & procedures for NEES equipment sites & network
- Enhance interaction of NEES collaboratory with earthquake engineering community
- Conduct and coordinate outreach and training for NEES equipment sites
- Develop connectivity and interactions with other U.S. and international equipment sites, programs, and networks
- Pursue technology development for NEES collaboratory
- Interface with NSF and other federal agency earthquake programs

# NEES & the Federal Budget Process

## NEES Authorized FY 2000-2004

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(Current Inflation-adjusted Dollars)

*Annual Requested Appropriation (\$ million)*

Note: Total may not add due to rounding.

**FY starts October 1**

FY 00	FY 01	FY 02	FY 03	FY 04	TOTAL
7.7	28.2	24.4	4.5	17.0	81.9

# NEES Publicity

- NSF Press Releases
  - NSF to Establish "Cybersystem" for Earthquake Engineering Simulation
    - <http://www.nsf.gov/cgi-bin/getpub?pr9913>
  - NSF Funds First Phase of Earthquake Network
    - <http://www.nsf.gov/od/lpa/news/press/00/pr0057.htm>
  - Earthquake Research Speeded by Networking
    - <http://www.nsf.gov/od/lpa/news/press/01/pr0110.htm>
- NSF Brochure
  - Developed by outside contractor (TBD)
  - Includes all components of NEES

# NEES Publicity (cont'd)

- Institutional Press Releases (examples)
  - Partnership Awarded Grant for Design of Network for Earthquake Engineering Simulation - Sept 5, 2000
    - <http://access.ncsa.uiuc.edu/Headlines/00Headlines/000905.NEES.html>
  - \$10.5 million from NSF, \$6 million SUNY Investment to Bolster UB Earthquake Engineering Research - Feb 3, 2001
    - <http://www.buffalo.edu/scripts/newnews/index.cgi?article=105million>
  - UC Davis received \$4.6 million for earthquake research - Oct 6, 2000
    - [http://www-dateline.ucdavis.edu/100600/DL\\_quake.html](http://www-dateline.ucdavis.edu/100600/DL_quake.html)
  - \$4.8 million grant to OSU will enhance tsunami research - Feb 6, 2001
    - <http://osu.orst.edu/dept/ncs/newsarch/2001/Feb01/tsunami.htm>
  - Technological makeover scheduled for UC Berkeley seismic testing facility - Feb 6, 2001
    - [http://www.berkeley.edu/news/media/releases/2001/02/06\\_tech.html](http://www.berkeley.edu/news/media/releases/2001/02/06_tech.html)
  - University of Nevada receives \$7 million to enhance earthquake engineering research laboratory - Feb 6, 2001
    - <http://www.unr.edu/nevadanews/vol4no125.html>

# NEES Publicity (cont'd)

- Commercial Publications (examples)
  - *ENR (Engineering News-Record)*
    - “NSF to Create Earthquake Research Network,” January 17, 2000, Vol. 244, No. 2, Pg. 9
    - “Virtual Access for Earthquake Center,” September 18, 2000, Vol. 245, No. 11, Pg. 42
  - *Civil Engineering Magazine*
    - “NSF Plans to Connect Research Community,” March 2000, page 21
  - *Local Newspapers*
    - Silicon Valley Press Release: Network of labs promises to shake up quake research - February 13, 2001
      - <http://www0.mercurycenter.com/svtech/news/indepth/docs/quake021301.htm>
- EERI Newsletters

# NEES as a Collaboratory: Help develop the 2005-2014 vision

- **Research**
  - Major research questions, collaborations, challenges,...
- **Education (e.g., (NSF CRCRD, CCLI, Action Agenda,...))**
  - CRCRD - “Interactive Web-Based Experimental and Computational Learning Environments for Earthquake Engineering Research and Education” (NSF EEC-0088130, Ahmed Elgamal, PI, UCSD, \$469,343/3 years)
  - CCLI - “Instructional Shake Tables: A Cooperative Effort in Earthquake Engineering Education” (NSF DUE-9950340, Shirley Dyke, PI, Washington Univ., \$138,000/2 years)
  - Action Agenda - “Hurricane Engineering: A New Curriculum for a Planet at Risk” (NSF EEC-0080524, Marc Levitan, PI, Louisiana State U, \$500,000/3 years)
- **Human Resource Development (e.g., REU sites, RET, ADVANCE,...)**
  - REU - “Structural Engineering Research Experiences for Undergraduates” (NSF EEC-9820506, Shirley Dyke, PI, Washington Univ., \$250,000/5 years)